

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/842,224	04/25/2001	Dietmar Adler	4797A-21 7428		
7590 09/18/2006			EXAMINER		
Thomas C. Pontani, Esq.			LEUNG, JENNIFER A		
Cohen, Pontani, Lieberman & Pavane					
Suite 1210			ART UNIT	PAPER NUMBER	
551 Fifth Avenue			1764		
New York, NY	10176		DATE MAILED: 09/18/2006		

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)				
Office Action Summary		09/842,224	ADLER ET AL.				
		Examiner	Art Unit				
		Jennifer A. Leung	1764				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply							
WHIC - Exte after - If NC - Failt Any	IORTENED STATUTORY PERIOD FOR REPL CHEVER IS LONGER, FROM THE MAILING D ensions of time may be available under the provisions of 37 CFR 1.1 SIX (6) MONTHS from the mailing date of this communication. O period for reply is specified above, the maximum statutory period are to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailin and patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tin will apply and will expire SIX (6) MONTHS from a, cause the application to become ABANDONE	N. nely filed the mailing date of this o D (35 U.S.C. § 133).				
Status	•						
1)⊠	Responsive to communication(s) filed on 06 J	uly 2006.		*******			
		s action is non-final.		• .			
3)[,—						
	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.						
Disposit	ion of Claims						
4)⊠	4)⊠ Claim(s) <u>1-10,12,17 and 18</u> is/are pending in the application.						
,	4a) Of the above claim(s) <u>4-6 and 18</u> is/are withdrawn from consideration.						
5)□	Claim(s) is/are allowed.						
6)⊠	☑ Claim(s) <u>1-3,7-10,12 and 17</u> is/are rejected.						
7)	Claim(s) is/are objected to.						
8)⊠	Claim(s) <u>1-10,12,17 and 18</u> are subject to restriction and/or election requirement.						
Applicat	ion Papers						
9)□	The specification is objected to by the Examine	er					
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.							
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).							
	Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.							
Priority (under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).							
a)	☐ All b)☐ Some * c)☐ None of:						
	1. Certified copies of the priority document	s have been received.					
	2. Certified copies of the priority documents have been received in Application No						
	3. Copies of the certified copies of the priority documents have been received in this National Stage						
	application from the International Bureau (PCT Rule 17.2(a)).						
* See the attached detailed Office action for a list of the certified copies not received.							
Attachmen	at(s)						
1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)							
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 5) Notice of Informal Patent Application							
Paper No(s)/Mail Date 6) Other:							

DETAILED ACTION

Response to Amendment

1. Applicant's amendment submitted on July 6, 2006 has been received and carefully considered. Claims 11 and 13-16 are cancelled. Claims 4-6 and 18 are withdrawn. Claims 1-3, 7-10, 12 and 17 are under consideration.

Claim Objections

2. Claim 1 is objected to because "reactor space" (line 8) should be changed to --reaction space--, for consistency in claim terminology. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 7-10, 12 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, it is unclear as where support may be found for the newly added limitation of a gasification reactor vessel that operates under "temperatures between 1000 °C and 1600 °C". It is noted that the reference to page 3, lines 9-13, of the specification is directed only to gasification reactors of the prior art, and not to Applicants' own reactor vessel.

Application/Control Number: 09/842,224 Page 3

Art Unit: 1764

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Jewell (WO 01/86220).

Regarding claims 1 and 12, Jewell discloses an apparatus (i.e., a reactor for gasifying carbonaceous materials) comprising:

a pressure shell (i.e., pressure vessel shell 28, FIG. 6B) having an encircling body wall and shell ends at each of opposite ends of the body wall (see figure), said pressure shell encasing a reaction space;

a plurality of cooling ducts (i.e., numerous half-pipe conduits 56 defining passages 38) extending around an outer surface of the body wall 28 (see FIG. 6B), said ducts 56 being fixedly connected (e.g., by means of welds) to the outer surface 28, wherein the interior spaces 38 of the cooling ducts 56 communicate with the outer surface of the body wall 28; and wherein the ducts 56 are arranged and dimensioned to provide cooling along essentially the entire length of the body wall between the shell ends (see figure);

a fluid supply conduit and a fluid discharge conduit communicating with the cooling ducts 56 (i.e., a heat transfer fluid 36 is supplied to and discharged from the passages 38 of ducts 56 via inlets and outlets 58, by means of the conduits 280/281 and 282/285, respectively, of fluid

Art Unit: 1764

control system S-280; FIG. 2B, 6B); and

a lining of a refractory encircling an inner surface of body wall 28, the lining comprising first and second separate concentric layers of refractory material (e.g., refractory layers 20,22,24; shown in FIG. 6A), the lining comprising a material such as ceramic (e.g., a high alumina refractory brick with an insulating firebrick refractory; also disclosed are liners of "ceramic, glass, or other coatings"; see page 13, line 14 to page 14, line 2).

Regarding claims 2 and 3, each duct 56 is fixedly connected to the body wall 28 outer surface with weld connections (see inset of FIG. 6B and also FIG. 6C). As best understood, the end portions of the "C" shape of duct 56 define a pair of spaced webs, and the middle portion of the "C" shape of duct 56 defines an arcuate segment joining the opposite edges of the webs.

Instant claims 1-3 and 12 structurally read on the apparatus of Jewell.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1764

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell (WO 01/86220) in view of McKee (US 1,961,903).

The ducts 56 extend circularly around the body wall outer surface 28 (see FIG. 6B) and said fluid supply and fluid discharge conduits (i.e., conduit 280/281 for feeding heat transfer fluid 36 and conduit 282/285 for discharging heat transfer fluid 36 in system S-280; see FIG. 2B) are disposed, respectively, at one of two opposite ends of the shell body 28 (i.e., for feeding fluid 36 to the bottom 58 of the duct 56, and for discharging fluid 36 from the top 58 of the duct 56; see FIG. 2B, 6B). Although Jewell is silent as to the fluid supply and fluid discharge conduits being annular, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the fluid supply and fluid discharge conduits as such in the apparatus of Jewell, on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that the annular conduit configuration is well known in art with respect to the construction of headers or manifolding structures for supplying or discharging fluids to and from heat exchangers. McKee (FIG. 1, 2) evidences conventionality by disclosing an apparatus comprising an annular fluid supply conduit and an annular fluid discharge conduit (i.e., circular header *i* and circular header *i'*) for feeding and withdrawing fluid from a plurality of heat transfer conduits (i.e., jacket members h).

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell (WO 01/86220) in view of McKee (US 1,961,903), as applied to claim 7 above, and further in view of Vihl (US 3,318,376) OR Siclari et al. (US 3,787,481).

Each duct 56 encircles the body outer wall surface 28 spaced apart and parallel to ducts 56 adjacent thereto (see FIG. 6B). Although Jewell does not specifically disclose or illustrate the

encircling ducts 56 being arranged obliquely of a central axis of the body wall 28, or in a spiral course around the body wall 28 outer surface, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to configure the cooling ducts 56 as such in the modified apparatus of Jewell, on the basis of suitability for the intended use thereof, because heat transfer jackets comprising an oblique or spiral cooling duct configuration are conventionally known in the art. Vihl (FIG. 1, 2), for instance, evidences conventionality by disclosing an apparatus comprising a plurality of cooling ducts (i.e., wrapping segments 24, 26, 28) encircling the body outer wall surface of a vessel 22 in an oblique or spiral fashion. Siclari et al. (Figure) further evidences conventionality by disclosing an apparatus comprising a cooling duct 14 encircling the body outer wall surface 13 of a vessel in an oblique or spiral fashion.

Page 6

7. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell (WO 01/86220) in view of McKee (US 1,961,903) AND Vihl (US 3,318,376) OR Siclari et al. (US 3,787,481).

The ducts 56 in the apparatus of Jewell extend circularly around the body wall outer surface 28 (see FIG. 6B), and said fluid supply and fluid discharge conduits (i.e., conduit 280/281 for feeding heat transfer fluid 36 and conduit 282/285 for discharging heat transfer fluid 36 in system S-280; see FIG. 2B) are disposed, respectively, at one of two opposite ends of the shell body 28 (i.e., fluid 36 is supplied to the bottom 58 of the duct 56, and fluid 36 is discharged at the top 58 of the duct 56; see FIG. 2B, 6B). Although Jewell is silent as to the fluid supply and fluid discharge conduits being annular, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the fluid supply and fluid discharge conduits as such in the apparatus of Jewell, on the basis of suitability for the intended use

Art Unit: 1764

thereof, because the Examiner takes Official Notice that the annular conduit configuration is well known in art with respect to the construction of headers or manifolding structures for supplying and discharging heat transfer fluids to and from heat exchangers. McKee (FIG. 1, 2) evidences conventionality by disclosing an apparatus comprising annular fluid supply and fluid discharge conduits (i.e., circular header *i* and circular header *i'*) for feeding and withdrawing fluid from a plurality of heat transfer conduits (i.e., jacket members *h*).

In addition, although Jewell does not specifically disclose or illustrate the encircling ducts 56 being arranged with at least a longitudinal component along the body wall 28, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to configure the cooling ducts 56 as such in the modified apparatus of Jewell, on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that heat transfer jackets comprising cooling ducts having at least a longitudinal component are conventionally known in the art. Vihl (FIG. 1, 2), for instance, evidences conventionality by disclosing an apparatus comprising a plurality of cooling ducts (i.e., wrapping segments 24, 26, 28) encircling the body outer wall surface of a vessel 22 in an oblique or spiral fashion. Siclari et al. (Figure) further evidences conventionality by disclosing an apparatus comprising a cooling duct 14 encircling the body outer wall surface 13 of a vessel in an oblique or spiral fashion.

8. Claims 1-3, 7, 10-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Affleck (US 2,697,598) in view of Schulz (US 4,340,397).

Regarding claim 1, Affleck (FIG. 1-3) discloses an apparatus (i.e., a blast furnace) comprising: an encircling body wall (i.e., wall 17 of the bosh region 12) and a plurality of cooling ducts (i.e., defining a plurality of fully enclosed water circulation channels 18) extending

Art Unit: 1764

around an outer surface of the body wall 17 of the bosh region 12, said ducts 18 being fixedly connected to the outer surface 17, wherein the interior spaces of ducts 18 communicate with the outer surface of the body wall 17; a fluid supply conduit (i.e., water inlet pipe 21) and a fluid discharge conduit (i.e., discharge pipe 23) communicating with cooling ducts 18; and a lining of refractory encircling an inner surface of the body wall 17 of the bosh region 12, wherein the lining comprises at least two separate concentric layers 15 and 16 of a refractory material.

Although Affleck does not specifically illustrate the body wall 17 of the bosh region 12 as being part of a pressure shell having shell ends at each of opposite ends of a body wall, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the wall 17 as part of a pressure shell having the claimed configuration in the apparatus of Affleck, because it is well known in the art to construct blast furnaces comprising pressure shells having the claimed configuration, as evidenced by Schulz (i.e., blast furnace 10 with a pressure shell 12 having opposite ends and a body wall; see FIG. 1).

In view of the newly added limitation of, "ducts being arranged and dimensioned for providing cooling along essentially an entire length of said body wall between said shell ends," Affleck further discloses that,

"For simplicity I have illustrated the cooling means of my invention as applied only to the bosh, although it is apparent that the same cooling means can be applied elsewhere, and that the invention is not limited by this illustration." (column 1, lines 60-65).

Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the cooling ducts 18 to extend essentially along an entire length of the body wall in the apparatus of Affleck, in order to provide the benefits of wall cooling to the other portions of the apparatus.

Art Unit: 1764

Regarding claims 2 and 3, each cooling duct 18 comprises a pair of spaced webs (i.e., the walls of the duct 18, extending perpendicularly from the wall 17; or plates 19; see FIG. 2) fixedly connected at common edges of each to the body wall outer surface, and a flat segment (i.e., the wall of duct 18, substantially parallel to the wall 17) joining the opposite edges of the webs, the connections being made by welds (see column 1, lines 33-39). Affleck, however, is silent as to the flat segment comprising an arcuate segment. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the flat segment to comprise an arcuate segment in the apparatus of Affleck, on the basis of suitability for the intended use thereof, because changes in shape involves only ordinary skill in the art. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966); *Glue Co. v Upton* 97 US 3, 24 (USSC 1878), and the Examiner takes Official Notice that the claimed arcuate shape for the construction of cooling ducts is well known in the art of heat exchanger construction.

Regarding claim 7, the ducts 18 extend circularly around the body wall outer surface 17 (see FIG. 2), said fluid supply conduits 21 and fluid discharge conduits 23 being disposed, respectively, at one of two opposite ends of the shell body (i.e., the supply conduits 21 connect to the bottom of ducts 18, and the discharge conduits 23 connect to the top of ducts 18; see FIG. 3). Affleck, however, is silent as to the supply and discharge conduits 21,23 being annular. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the fluid supply and fluid discharge conduits as such in the apparatus of Affleck, on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that the annular conduit configuration is well known in art with respect to the construction of headers or manifolding structures for supplying and discharging heat transfer

Art Unit: 1764

fluids to and from heat exchangers.

Regarding claim 10, the ducts 18 encircle the body outer wall surface 17 spaced from ducts 18 adjacent thereto (see FIG. 2, 3).

Regarding claim 12, Affleck discloses that the refractory material may comprise a relatively thick layer of carbon blocks 15, and an inner layer of ceramic brickwork 16. In addition, other parts of the wall can embody a similar construction, or comprise the "more common ceramic brickwork construction." (see column 1, lines 50-66). Although carbon blocks 15 are disclosed for one of the refractory layers, it would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute another known, suitable refractory material for the carbon in the apparatus of Affleck, on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that the construction of furnaces using layers of ceramic refractory is well known in the art.

Regarding claim 17, the ducts 18 extend in a direction having at least a longitudinal component along wall 17, with fluid supply 21 and discharge 23 conduits located, respectively, at one of two opposite ends of the shell body (i.e., the conduit 21 connects to the bottom of duct 18, whereas the conduit 23 connects to the top of duct 18; FIG. 3). Affleck, however, is silent as to the supply and discharge conduits 21,23 being annular. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the fluid supply and discharge conduits as such in the apparatus of Affleck, on the basis of suitability for the intended use, because the Examiner takes Official Notice that the annular conduit configuration is well known in art with respect to the construction of headers or manifold structures for supplying and discharging heat transfer fluids to and from heat exchangers.

Response to Arguments

9. Applicant's arguments filed July 6, 2006 have been fully considered but they are not persuasive.

Comments regarding Jewell (WO 01/86220), taken alone or in combination.

On page 7 (first full paragraph) of the response, Applicants argue that Jewell is not prior art under 35 U.S.C. § 102(e). The Examiner respectfully disagrees. Under the revised 35 U.S.C. § 102(e), a person shall be entitled to a patent unless—

the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Revised 35 U.S.C. 102(e) has two separate clauses, namely, 35 U.S.C. 102(e)(1) for publications of patent applications and 35 U.S.C. 102(e)(2) for U.S. patents. 35 U.S.C. 102(e)(1), in combination with amended 35 U.S.C. 374, created a new category of prior art by providing prior art effect for certain publications of patent applications, including certain international applications, as of their effective United States filing dates (which will include certain international filing dates). Under revised 35 U.S.C. 102(e), an international filing date which is on or after November 29, 2000 is a United States filing date if the international application designated the United States and was published by the World Intellectual Property Organization (WIPO) under the Patent Cooperation Treaty (PCT) Article 21(2) in the English language.

Art Unit: 1764

date (if all three conditions noted above are met) <u>OR</u> an earlier U.S. filing date for which priority or benefit is properly claimed.

In the instant case, the Jewell reference has an international filing date of May 4, 2001; designated the United States; and was published under PCT Article 21(2) in the English language. In addition, the international application properly claims benefit to an earlier-filed non-provisional U.S. patent application having a filing date of May 5, 2000. Thus, for prior art purposes, the 102(e) date is May 5, 2000.

Comments regarding the combination of Affleck (US 2,697,598) and Schulz (US 4,340,397).

Beginning on page 7 (last paragraph) of the response, Applicants argue that the combination of Affleck and Schulz fails to teach Applicants' claimed apparatus because both Affleck and Schulz disclose blast furnaces, and blast furnaces are operated entirely differently than fly stream gasification reactors.

The Examiner respectfully disagrees and maintains that the modified apparatus of Affleck meets the claims, because the recitation of an intended use of the claimed invention (e.g., for conducting fly stream gasification) must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Exparte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. In re Young, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963).

Application/Control Number: 09/842,224 Page 13

The state of the s

region in the second

Art Unit: 1764

Name (Mark)

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Application/Control Number: 09/842,224 Page 14

Art Unit: 1764

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung September 14, 2006 MH

> ALEXA DOROSHENK NECKEL PRIMARY EXAMINER